STUDENT TRANSPORTATION INC.®

Propane Autogas School Bus Operations

STUDENT TRANSPORTATION OF AMERICA®

Student Transportation of America

Student Transportation Inc. is North America's largest independent provider of school bus transportation services, operating more than 13,000 vehicles in over 360 school districts.

STA is a growing family of local companies committed to providing the highest level of safe, reliable and cost-effective student transportation. Our services are delivered by drivers, dispatchers, maintenance technicians, terminal managers, and other caring members of your community whom you know and trust.

Student Transportation of America

Student Transportation Inc. operates over 1,300 Propane Autogas vehicles in 7 States across the Country including newly added Contoocook Valley (ConVal) School District as well as Sanford Maine Public Schools and East Providence RI locally.

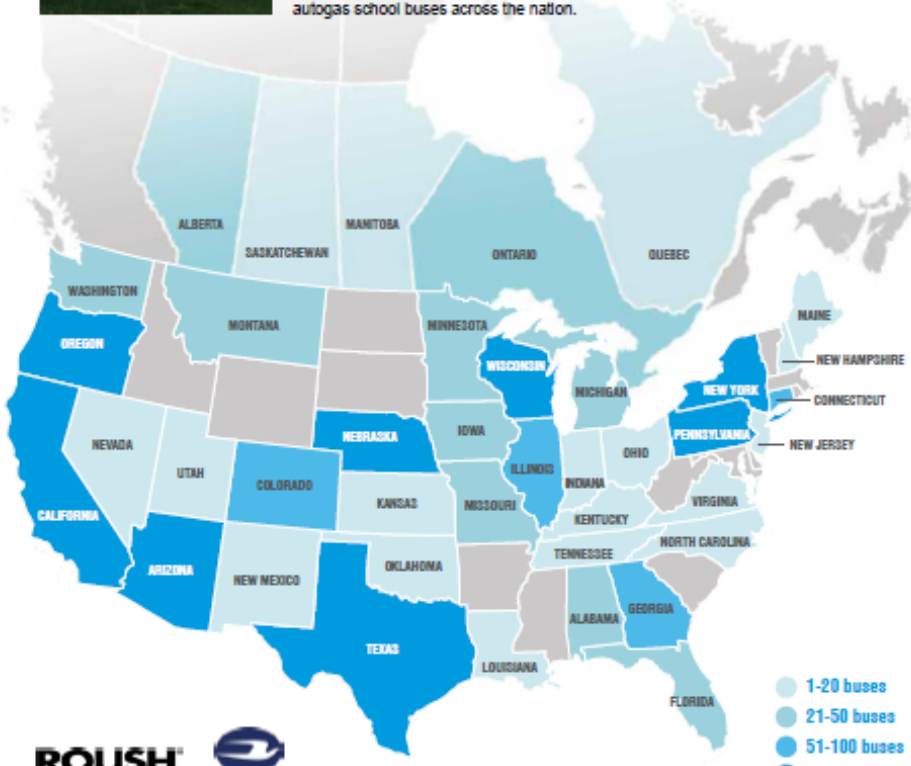
State	Number of LPG Buses
California	305
Texas	113
Minnesota	95
Pennsylvania	279
Maine	36
Nebraska	435
New Hampshire	44
Rhode Island	43
Total	**1350**

PROPANE AUTOGAS SCHOOL BUSES ARE MAINSTREAM

Propane autogas is the nation's fastest growing transportation fuel in the school bus industry. The adoption of a domestically produced alternative fuel like propane autogas benefits schools and their community — saving taxpayer dollars and reducing harmful emissions in the air.

Whether based on a rapid return on investment, community impact, energy security, carbon footprint, safety, serviceability or a combination of these, fueling with propane autogas is a versatile and readily available solution.

Partners Blue Bird and ROUSH CleanTech offer the Type A Micro Bird and the Type C Vision fueled by propane autogas. This map shows deployment of these propane autogas school buses across the nation.



ROUSH CLEANTECH

BLUE BIRD

NOW DEPLOYED IN THE U.S.

TEXAS 1,324	26 buses
CALIFORNIA 754	15 buses
NEBRASKA 435	8.5 buses
OREGON 260	5 buses
NEW YORK 222	4.5 buses
PENNSYLVANIA 155	3 buses
WISCONSIN 139	2.5 buses

= 50 BUSES

Map created March 2014

Product Overview

Model Years

2015

Engine Size

6.8L V10 (3V)

Applications

All cab configurations.

All wheelbase configurations.

6-speed automatic transmission.

Fuel Tank Capacity

Mid-Ship: 67 gallons (usable)

Extended: 93 gallons (usable)

Technical Specifications

EPA and CARB approved.

GVWR: 33,000 lbs.

Up to 77 passengers

Order Availability

Blue Bird dealers

ALTOONA TESTED

Blue Bird Vision

(Type C)

BLUE BIRD

Product Overview

Model Years

2015

Engine Size

6.0L Vortec

Applications

All cab configurations.

158” / 176” wheelbase configurations.

5-speed automatic transmission.

Fuel Tank Capacity

Aft-Axle: 41 gallons (usable)

Technical Specifications

EPA and CARB approved.

GVWR: 14,500 lbs.

Up to 30 passengers

Order Availability

ThomasBuilt Buses dealers

ALTOONA TESTED

The Minotour® Propane bus

Thomas BUILT BUSES

Because every mile matters.℠

Fueling Infrastructure

Public Propane Station.

- Over 1,500 public stations nationally.

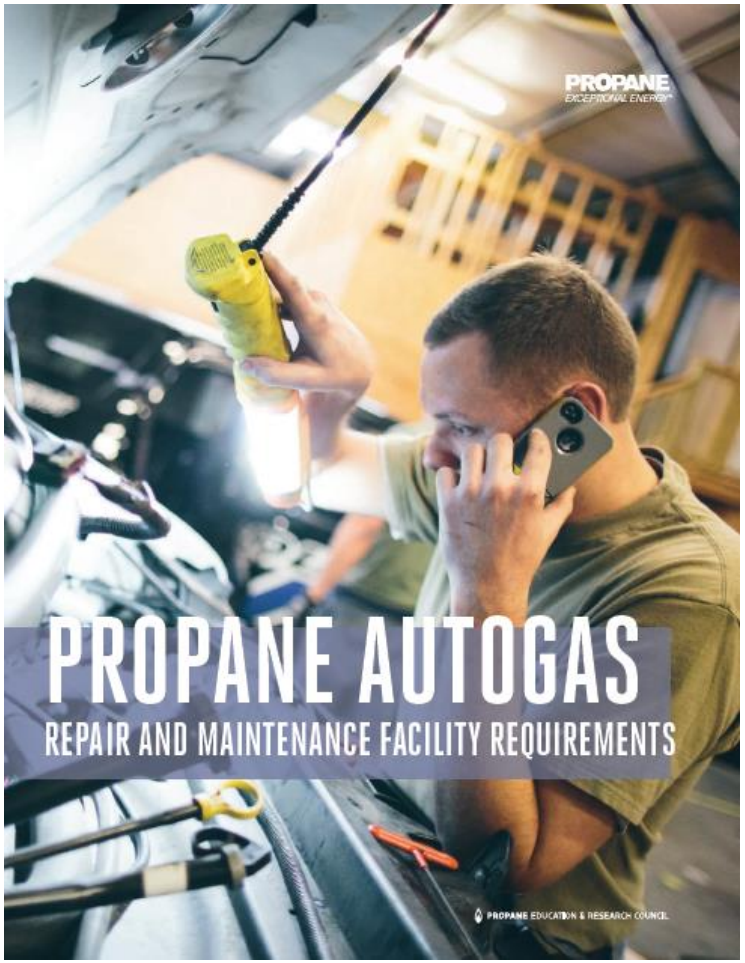
Private Infrastructure

Fleets may purchase and install fueling station equipment ~$80,000

Suppliers may offer a no cost or inexpensive lease of the station equipment in return for a multi-year fuel supply contract – Fleet Operator is responsible for the infrastructure costs (electrical connections, concrete pads, fencing, lights, etc.)

On-site resupply via bobtail fill-up.

Facility Requirements



Similar to Gas/Diesel

•Ventilation requirements are the same as gas or diesel and gas detection devices are not required to service Autogas vehicles.

• To service a vehicle inside, the same considerations for any fuel delivery system apply.

• Major repairs fall under the same code requirements as gas or diesel.

Operational Performance

Power and Driving Technique

Limiting idle time can significantly improve fuel economy.

Unlike a diesel engine, the gasoline style propane engine does not require extended warm-up time.

No warm-up required in warm weather.

Faster Engine / Cabin warm-up time

-Reducing $$$ Idling Time

STA Omaha Nebraska Terminal
January 6, 2014.
All propane buses started without issue.

Operational Performance

- ROUSH CleanTech propane autogas vehicles achieve the same horsepower and torque as equivalent gasoline vehicles.
- Clean Burning Propane Autogas requires less maintenance and increases service intervals than Diesel Fleet.
- 11 Decibels quieter than a Diesel Bus.

Safety Features

Safe for Drivers and Technicians (Non-Toxic)

ROUSH CleanTech fuel tanks are 20 x more puncture resistant than the standard gasoline tank.
Electronic fuel shutoff when key is off.

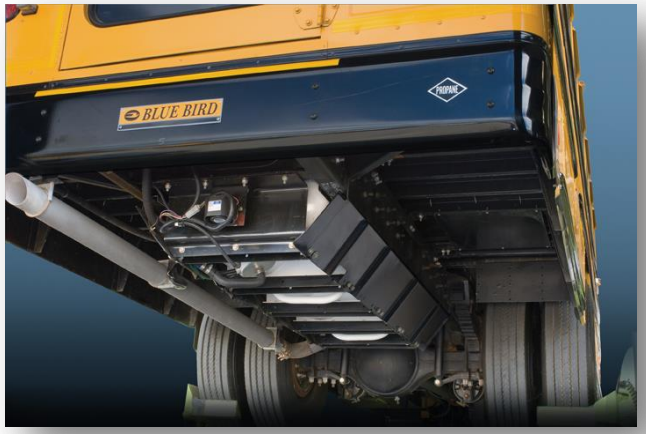
The odorant level of propane autogas is extremely high relative to its flammability, which ensure that an operator can detect a leak and get it corrected long before it poses a safety concern.

- **Meet strict set of rules and regulations:**

Fuel System Safety Features

Multiple safety devices in place to ensure fuel is shutoff in an accident:
(*one-way check valves, fill valve, return valve, excess flow valves ,supply valve).*
If the fuel system is compromised in an accident, propane will dissipate instead of pooling.

All components are protected such that even if there were a vehicle fire, no component would be exposed to burnt pressure (propane can return to the tank, where it can be controllably vented through the PRV if the extreme conditions do occur). Higher temperature spark and narrow air/fuel ratio for ignition (propane in the tank cannot ignite).



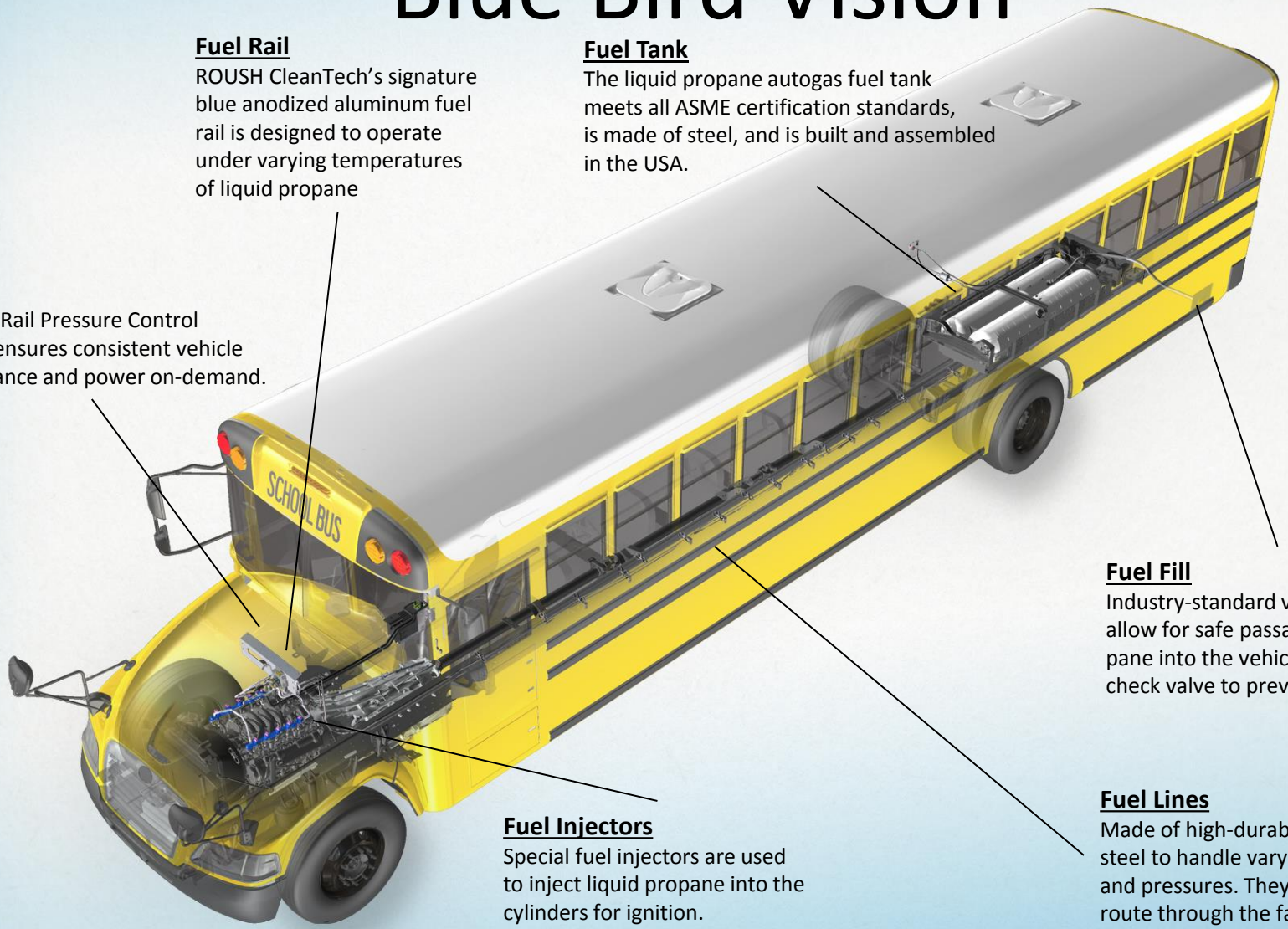
ROUSH CLEANTECH

Blue Bird Vision

Fuel Rail
ROUSH CleanTech's signature blue anodized aluminum fuel rail is designed to operate under varying temperatures of liquid propane

Fuel Tank
The liquid propane autogas fuel tank meets all ASME certification standards, is made of steel, and is built and assembled in the USA.

FRPCM
The Fuel Rail Pressure Control Module ensures consistent vehicle performance and power on-demand.



Fuel Fill
Industry-standard valve designed to allow for safe passage of liquid propane into the vehicle. Includes a check valve to prevent fuel leaks.

Fuel Injectors
Special fuel injectors are used to inject liquid propane into the cylinders for ignition.

Fuel Lines
Made of high-durability stainless steel to handle varying temperatures and pressures. They are designed to route through the factory line locations.

Environmental Benefits

- Lower Emissions – Studies show that more than 70% of ambient air pollution comes from diesel emissions alone. Diesel particulates are dangerous because they are so tiny, they can lodge into the deepest areas of human lungs. Children, in particular, are susceptible because they breathe 50% more air per pound of body weight than adults.
  - Propane powered buses emit virtually zero particulate matter. In essence, this is a 100% decrease in unhealthy particulate emissions when compared to diesel school buses

Environmental Benefits

Packing a cleaner, greener approach to transportation, propane Autogas-powered vehicles significantly reduce emissions:

- 60% Reduction in Nitrogen Oxide Emissions
- 80% Fewer-Smog Producing Hydrocarbons
- 100% Reduction in Particulate Matter

Fuel Savings

ANNUAL COST PER VEHICLE		
	Diesel Calculation	**Autogas Calculation**
Total vehicle miles	15,000	15,000
Miles per gallon	7	4.5
Total gallons	2,143	3,333
Cost per gallon	$2.50	$1.25
Total Annual Costs	$5,357	$4,166
Annual Savings per Vehicle		**~$1,200**

Real World Experience

STA – Peterborough

ConVal School District

SAU - 1

STA - Peterborough

ConVal School District SAU-1:

- Geographically largest school district in New Hampshire
- Service (9) nine towns
  - 8 Elementary Schools
  - 2 Middle Schools
  - 1 High School

Fleet Statistics:

- 29 Full Size Propane Buses (77 Passenger)
  - 400 Mile range/tank
- 15 Propane Micro Buses (29 Passenger)
  - 300 Mile range/tank
- 10 Diesel Buses (Long Distance Charters)
- 2 Minivans (Dodge Caravans)

STA - Peterborough

- Fleet roll-out August 27, 2015
- Infrastructure took approximately 5-weeks to install
- 4-hours of Driver Training on new buses/systems
- Feedback to Date:
  - "I love how quiet the new buses are" - Parent
  - "They are so clean….none of that black smoke!" - Parent
  - "We missed the bus because we didn't hear it coming"- Parent and Student
  - "The Bus warms up so quick" - Driver

STA - Peterborough

Daily Operations:

- 36 daily routes
- Average of 6-9 Extra Curricular trips each day – in season
- Travel Approximately 3,200 miles daily
- Rotate Fueling throughout the fleet
  - Key to managing wait times
  - AM & PM Fueling
- Systematic Preventative Maintenance Program/Schedule

Fueling System:

- (4) Four 1,000 gallon tanks
- Nitrogen Lock-out safety system
- Ideal in cold weather conditions

Customer Testimonial - ConVal

My name is Marian Alese, and I have been the Business Administrator at ConVal since 1997. I am unable to attend the event today, but wish to express my support and pleasure with our new fleet.
Our district covers 9 towns within a 250 mile radius. Our buses travel close to 3000 miles. Though the District contracted out transportation services, we paid for the fuel; when diesel prices reached $4/gallon, that added almost $200,000 to our budget.

STA has been our transportation provider for the past 10 years. Last fall they came to us with a proposal for renewing our existing contract. We had assumed that we would renew, and would get new buses. We were pleasantly surprised when the proposal included a switch to an all propane fleet.

I took the the proposal to our Board. The new contract was unanimously approved with almost no discussion. Our new transportation solution is both fiscally responsible and environmentally sound. The fuel savings alone amounted to over $190,000 per year at current diesel prices, and we have reduced our impact on the environment.

We are very proud to be the first District in NH to partner with STA in all propane fleet.

The only downside occurred during the first couple days of school- we did have some students miss the bus because they are so quiet!

Thank you,

Marian Alese
Business Administrator

Customer Testimonial - Sanford

Sanford Maine School District Replaces 31 Diesel Buses with Economical and Clean Propane Autogas

Largest Fleet of Alternative Fueled Buses in Maine Transport Students Safely While Also Saving 25% on Fuel Costs Annually

Sanford, Maine (October 23, 2014) — 31 buses fueled by clean-burning, affordable propane Autogas are transporting students for the 2014/15 school year in the Sanford School District.

A short return on investment, the ease of fueling, the low infrastructure cost and the reduced emissions compared to diesel fuel were the reasons the Sanford School district made the choice to with Propane Autogas.

“As school budgets and funding for our district gets tighter every year, we are always committed to finding cost savings,” said Sanford Schools Superintendent David Theoharides. “In conjunction with our transportation provider, Ledgemere/ Student Transportation America (STA), we found that Propane buses would not only save the district money, but also reduce the environmental impact of using diesel. The propane buses will save nearly 25% on fuel costs in year one, reduce the amount of carbon dioxide by 12% and be as safe if not safer than the buses they replace.”

Ledgemere Transportation, which fuels at their bus depot, has invested in 4,000 gallons or propane storage and high speed pumps to allow drivers to quickly and safely refuel their vehicles. Autogas infrastructure is less expensive to install than all other conventional and alternative transportation fuels. Using Propane Autogas as an alternative fuel represents a reduction in greenhouse gases, fuel costs and a reduction and cost on the regular maintenance required on the buses.

In addition, Ledgemere Transport also had significant electrical costs for powering block heaters to start their diesel buses in cold weather. Blue Bird Propane Vision buses start up in temperatures as low as minus 40 degrees Fahrenheit without block heaters.

“We understand the financial challenges that our customers face,” says Greg Stinson, Vice President of Operations for Student Transportation America. “Diesel fuel costs are significant in addition to the operational and maintenance costs of the old buses. Propane Autogas allows us to provide a highly reliable and lower cost solution to school districts. We also like the ability to offer cost savings and the environmental benefits of propane.”

The school buses are the new Vision series from Blue Bird Bus. Each bus is equipped with a ROUSH CleanTech propane autogas fuel system. The propane system has undergone rigorous safety and performance testing and passed all with flying colors. Drivers will experience faster warm-ups, equal performance, a quieter ride (-11dB), and virtually zero particulate emissions. More than 4,000 Blue Bird school buses equipped with the ROUSH CleanTech propane autogas fuel system have been deployed across the U.S. and Canada.

Student Transportation of America – Turning the yellow school bus green.

STUDENT TRANSPORTATION OF AMERICA®